Serial No.: 10/657,496

Filed: September 8, 2003

Page : 2 of 11

Amendments to the claims (this listing replaces all prior versions):

1. (currently amended) A system comprising:

in a vehicle suspension having an actuator, a clamp circuit including switch circuitry powered by energy from movement of the actuator to generate a passively damp [[ing]] characteristic of the actuator during a failure.

- (previously presented) The system of claim 1 in which the actuator has a coil assembly, the switch circuitry including a switch for electrically connecting the coil assembly.
- 3. (original) The system of claim 2 in which the coil assembly is a multiple-phase coil assembly, the switch electrically connecting one or more coil ends to change the passive damping characteristic of the actuator.
- 4. (previously presented) The system of claim 2 in which the switch circuitry comprises a solid-state device.
- 5. (currently amended) The system of claim 4 in which the also comprising, in the vehicle suspension, clamp circuit including [[es]] a rectifier,
 - in which and the switch circuitry comprises a single unidirectional switch.
- 6. (previously presented) The system of claim 1 in which the actuator includes an armature and a stator, the movement of the actuator generating a back electromotive force (EMF) as a result of the armature moving relative to the stator within the actuator, the back EMF powering the switch circuitry.
- 7. (original) The system of claim 6 in which the back EMF is boosted by a supplemental circuit.

Serial No. : 10/657,496
Filed : September 8, 2003

Page : 3 of 11

8. (original) The system of claim 7 in which the supplemental circuit comprises a bipolar Royer oscillator capable of operating at an input voltage of approximately 0.5 volts.

- 9. (currently amended) The system of claim 1 in which the elamp-circuit switch circuitry is also enabled during vehicle startup and shutdown.
- 10. (cancelled)
- 11. (currently amended) The system of claim 1 in which the elamp-circuit switch circuitry is pulsed to change the passive damping characteristic of the actuator.
- 12. (currently amended) A system comprising:

in a vehicle suspension system having an actuator, an active clamp function provided by power-switching devices for the actuator; and

a clamp circuit including switch circuitry powered by energy from a motion of the actuator to generate a passive damping function during a failure.

- 13. (previously presented) The system of claim 12 in which the actuator has a multiple-phase coil assembly, the switch circuitry including a switch for electrically connecting one or more coil ends to change a passive damping characteristic of the actuator.
- 14. (previously presented) The system of claim 13 in which the switch circuitry comprises a solid-state device.
- 15. (currently amended) The system of claim 14 in which the also comprising a clamp circuit including [[es]] a rectifier,

in which and the switch circuitry comprises a single unidirectional switch.

Serial No.: 10/657,496

Filed: September 8, 2003

Page : 4 of 11

16. (currently amended) The system of claim 12 in which the elamp-circuit switch circuitry is

also enabled during a vehicle startup and shutdown.

17. (cancelled)

18. (currently amended) The system of claim 12 in which the elamp-circuit switch circuitry is

pulsed to change the passive damping characteristic of the actuator.

19. (currently amended) A vehicle suspension system comprising:

an electronic controller adapted to produce an actuator control signal; and

an actuator adapted to receive electrical power from an external power source and to

produce a controlled force in response to the actuator control signal produced by the

electronic controller,

the actuator comprising a clamp circuit including switch circuitry powered by energy

from power generated within the actuator by movement of the actuator itself to generate a

passive damping characteristic of the actuator during a failure.

20. (previously presented) The system of claim 19 in which the actuator has a coil assembly,

the switch circuitry including a switch for electrically connecting the coil assembly.

21. (original) The system of claim 20 in which the coil assembly is a multiple-phase coil

assembly, the switch electrically connecting one or more coil ends to change the passive

damping characteristic of the actuator.

22. (original) The system of claim 20 in which a movement of the actuator generates an

electromotive force (EMF) to operate the switch adapted to receive the electromotive

force to maintain electrical connection between windings.

Serial No.: 10/657,496
Filed: September 8, 2003

Page : 5 of 11

23. (previously presented) The system of claim 20 in which the switch circuitry comprises a solid-state device.

24. (currently amended) The system of claim 23 in which the also comprising a clamp circuit including [[es]] a rectifier,

in which and the switch circuitry comprises a single unidirectional switch.

- 25. (currently amended) The system of claim 19 in which the elamp circuit switch circuitry is pulsed to change the passive damping characteristic of the actuator.
- 26. (currently amended) A method comprising:

in a vehicle suspension having an actuator, during a failure,

generating a passive damping characteristic of the actuator <u>using through a clamp-circuit</u> including switch circuitry powered by energy from movement of the actuator.

- 27. (previously presented) The method of claim 26 in which the actuator has a coil assembly, the switch circuitry including a switch for electrically connecting the coil assembly.
- 28. (original) The method of claim 27 in which the coil assembly is a multiple-phase coil assembly, the switch electrically connecting one or more coil ends to change the passive damping characteristic of the actuator.
- 29. (previously presented) The method of claim 27 in which the switch circuitry comprises a solid-state device.
- 30. (currently amended) The method of claim 29 in which the <u>a_clamp</u> circuit includes a rectifier and the switch circuitry comprises a single unidirectional switch.

Serial No.: 10/657,496
Filed: September 8, 2003

Page : 6 of 11

31. (previously presented) The method of claim 26 in which the actuator includes an armature and a stator, the movement of the actuator generating a back electromotive force (EMF) as a result of the armature moving relative to the stator within the actuator, which powers the switch circuitry.

- 32. (original) The method of claim 31 in which the back EMF is boosted by a supplemental circuit.
- 33. (original) The method of claim 32 in which the supplemental circuit includes a bipolar Royer oscillator capable of operating at an input voltage approximately 0.5 volts.
- 34. (currently amended) The method of claim 26 in which the clamp-circuit switch circuitry is also enabled during a vehicle startup and shutdown.
- 35. (cancelled)
- 36. (original) The method of claim 26 in which the actuator is powered by a power electronics module that further provides an active clamp to the actuator.
- 37. (currently amended) The method of claim 36 in which the active clamp and the elamp eireuit switch circuitry are simultaneously enabled when a failure is detected or during a vehicle shutdown.
- 38. (currently amended) The method of claim 36 in which the active clamp is enabled and the clamp circuit switch circuitry is disabled sequentially during a vehicle startup.
- 39. (currently amended) The method of claim 36 in which the elamp circuit switch circuitry and the active clamp are sequentially disabled when switching back from failure to normal operation mode.

Attorney's Docket No.: 02103-381001 / AABOSS16 Applicant: Paul T. Bender

Serial No.: 10/657,496 : September 8, 2003

Filed

Page : 7 of 11

(currently amended) The method of claim 36 in which a clamp circuit status signal is fed 40. to the power electronics module to inhibit the power electronics module from switching

when the elamp-eireuit switch circuitry is enabled.

(currently amended) The method of claim 26 in which the elamp circuit switch circuitry 41.

is pulsed to change the passive damping characteristic of the actuator.

42-43. (cancelled

(previously presented) The system of claim 36 in which the power electronics module is 44.

powered by a battery.

(previously presented) The system of claim 36 in which the power electronics module is 45.

powered by a large valued capacitor.

46-58. (canceled).

(new) The system of claim 1 in which the failure includes a failure of a power supply of a 59.

vehicle including the system.

(new) The system of claim 1 in which the failure includes a failure of a connection 60.

between a power supply and the suspension.

(new) The system of claim 1 in which the switch circuitry is also powered by energy 61.

from movement of the actuator to generate the passive damping characteristic during

startup and shutdown of a vehicle including the system.

(new) A method for use in a vehicle having a power generation system and a suspension 62.

having an actuator, the method comprising:

Serial No.: 10/657,496

Filed: September 8, 2003

Page : 8 of 11

even when the power generation system fails to provide power, using power derived from movement of the actuator to electrically enable a switch to passively damp the actuator.